

## **REMARKS**

Claims 1-20 are pending. Claims 1, 10-13, and 15-20 have been amended. Claims 2-4 and 6 are original. Claims 5, 7-9, and 14 have been previously presented.

The foregoing amendments do not involve new matter. Support for amended claims 1, 10-13, and 15-20 can be found in Applicants' specification, for example, on page 7, lines 8-10; and on page 10, lines 28-30.

### **1. Summary of Telephonic Interview with Examiner on September 2, 2011**

The Applicant's representative appreciates the Examiner's time in a telephonic interview on September 2, 2011 regarding the present patent application. In the interview, independent claims 1 and 11-13 were discussed specifically. Claims 2-10 and 14-20 were discussed generally. Claim amendment as shown in this response was discussed. The general thrust of the principal arguments presented is repeated in the arguments below.

### **2. Claim Rejections under 35 U.S.C. § 103(a)**

#### **A. Claims 1-5, 7-9, 11-13, And 15-20**

Claims 1-5, 7-9, 11-13, and 15-20 have been rejected under 35 U.S.C. § 103(a) over McEntee et al. (U.S. Pat. Pub. No. 2004/0050701) in view of Loewy et al. (WO2000025936). The Applicant respectfully traverses this rejection.

The Examiner has conceded that McEntee does not teach a continuous chemical layer and a chemically reactive surface for compounds deposited on the surface (Office Action, page 9). The Examiner nevertheless attempted to cure this deficiency of McEntee by asserting that Loewy teaches

a continuous chemically functional layer, the chemically functional layer providing a protective layer for the dielectric layer and chemically reactive surface for compounds deposited on the surface (Office Action, page 9). The Examiner further asserted that it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to have extended the teachings of McEntee to include the continuous layer of chemical elements as taught by Loewy to arrive at the claimed invention with a reasonable expectation of success (Office Action, page 11).

In the Office Action, the Examiner asserted that Lowey teaches a “continuous” chemically functional layer, relying upon teachings from Loewy that “[d]eposition can be performed to make one continuous layer” and that particles in Loewy are deposited to form “a first monolayer of coverage” (Office Action, page 14; Loewy, page 9, lines 22 to page 10, line 2). Loewy, however, also teaches that these chemical layers are formed by particles deposited upon the substrates with openings between the particles and between the preferred locations. First, the chemical layers disclosed in Loewy must be porous to be functional as described. Loewy expressly discloses electrostatic deposition of dry particles onto a substrate and then the spraying of adhesive droplets onto the particles to hold the dry particles in place (see Figs. 1-2; and page 8, line 15 to page 10, line 17). A person having ordinary skill in the art would understand that, in order for the adhesive applied on the layer of particles to be able to hold the particles to the substrate, the layer of particles must be porous, as shown in Figs. 1A, 1B and 1C, so that the adhesive can permeate the layer and hold the same to the substrate surface.

Moreover, Loewy indeed explicitly teaches that the chemical layer is a powder coating and is permeable in nature (page 8, lines 16-17: “Powder

deposited on a substrate surface is often *very loosely bound* at least after the image force dissipates or the conductor creating the image force is removed"; emphasis added). Further, there is no teaching in Loewy that the subsequent treatment of the powder coating with a film-forming polymer 130 disposed from a fogging apparatus would render the powder coating (chemical layer) non-permeable. See Figs. 1B, 1C, and 2; page 8, line 29 to page 9, line 6. Also, Loewy explicitly teaches that the film-forming polymer itself would allow permeability. See page 9, lines 3-6. Thus, since the chemical layer as disclosed in Loewy is not uninterrupted (see Office Action, page 14), this layer would not prevent liquids and compounds deposited on the substrate from accessing the substrate surface.

In sharp contrast, the substrate adapted for selective micron and nanometer scale deposition as recited in amended independent claim 1 comprises a continuous chemically functional layer on the dielectric layer, wherein the chemically functional layer prevents liquids and the compounds deposited on the surface from accessing the dielectric layer. The substrate as recited in amended independent claim 11 comprises a continuous chemically functional layer on the photoconductive layer, wherein the chemically functional layer prevents liquids and the compounds deposited on the surface from accessing the photoconductive layer. The substrate adapted for manufacture of DNA arrays as recited in amended independent claim 12 comprises a continuous chemically functional layer on the photoconductive layer, wherein the chemically functional layer prevents liquids and compounds deposited on the chemically functional layer from accessing the photoconductive layer. The substrate adapted for manufacture of DNA arrays as recited in amended independent claim 13 comprises a continuous chemically functional layer on the photoconductive layer, wherein the

chemically functional layer prevents liquids and compounds deposited on the chemically functional layer from accessing the photoconductive layer.

In view of the above, the Applicant respectfully submits that McEntee in view of Loewy would not render amended independent claims 1 and 11-13 obvious. Accordingly, the rejection of amended independent claims 1 and 11-13 have been overcome and should be withdrawn.

Moreover, the dependent claims are patentable since they depend from the patentable amended independent claims 1 and 11-13.

#### **B. Claims 6 And 10**

Claims 6 and 10 have been rejected under 35 U.S.C. § 103(a) over McEntee in view of Loewy and further in view of Salafsky et al. (U.S. Pat. Pub. No. 2002/0094528). The Applicant respectfully traverses this rejection.

Claims 6 and 10 are both dependent on amended independent claim 1. Claim 1 has been shown to be patentable over McEntee in view of Loewy. Further, the claimed features of amended independent claim 1, as discussed above and shown to be not found in McEntee and Loewy, are not taught by Salafsky. Thus, the disclosures of McEntee, Loewy and Salafsky would not render the invention of amended independent claim 1 obvious. Claim 1, and claims 6 and 10 dependent thereon, are thus patentable over McEntee in view of Loewy and further in view of Salafsky.

#### **3. Claim 14**

There is no rejection of claim 14 in the present Office Action. Moreover, the Examiner stated that “[a]ny [prior] rejection not reiterated in this action has been withdrawn as being obviated by the amendment of the claims.” (Office Action, pages 2). As submitted in the prior response, the

Applicant respectfully requests that the Examiner confirm that claim 14 is patentable.

#### **4. Conclusion**

In view of the above, the Applicant respectfully submits that the claims are in condition for allowance. The Examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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